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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 1742
Examiner : Sikyin Ip
Serial No. : 09/937,889
Filed : October 2, 2001

Customer No.: 035811

Inventors : Akio Tosaka
: Sinjiro Kaneko
: Yoichi Tominaga
: Noriyuki Katayama
: Nobutaka Kurosawa
: Kei Sakata
: Osamu Furukimi

Docket No.: 1307-01

Confirmation No.: 8803

Title : HIGH TENSILE HOT-ROLLED STEEL SHEET
: HAVING EXCELLENT STRAIN AGING
: HARDENING PROPERTIES AND METHOD
: FOR PRODUCING THE SAME

Dated: August 2, 2007

Mail Stop Appeal Brief – Patent

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

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Reply Brief

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Date: _____

[Signature]
August 2, 2007



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REPLY BRIEF

Mail Stop Appeal Brief – Patent

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Sir:

This is submitted in response to the Examiner's Answer dated June 4, 2007.

The Appellants have carefully considered the Examiner's comments regarding the rejection under 35 U.S.C. §112 and have no further commentary.

With respect to the rejection under 35 U.S.C. §103, the Answer contains errors and raises new issues. Accordingly, the Appellants submit the following additional points in support of reversal of the rejection.

Page 9 of the Answer contains a comparison chart and an observation that the Appellants' arguments are found to be inconsistent with appealed Claims 1, 2, 10 and 12. The Answer particularly points to text in Appellants' Appeal Brief, although it does not identify the location of the alleged inconsistency. For the Board's convenience, the Appellants note that the apparent

inconsistency may be found in the fourth full paragraph of page 13 of the Appellants' Brief. The point in the Answer is that the Appellants take the position that Claims 1, 2, 10 and 12 recite less than "0.002% of AI." The Appellants confirm that this is a typographical error and that the text should have read "0.02% of AI." Correction is respectfully requested.

However, the Answer does not address several additional important points. The first point is that multiple other locations in the Appellants' Brief distinguish the Appellants' claimed range of less than 0.02% of AI over Maid. In that regard, the Appellants invite the Board's attention to the third full paragraph of page 17 of the Brief as well as the second full paragraph of page 19 of the Appellants' Brief. It readily becomes clear that the Appellants' intention is to distinguish the 0.02%-0.10% range of AI of Maid from the Appellants' claimed range of less than 0.02%.

It is also important to note that the chart on page 9 of the Examiner's Answer contains an error directed to exactly the same elemental component. In that regard, the chart indicates that appealed Claim 1 has an AI content of less than or equal to 0.02%. This is incorrect. The Appellants' claimed range is less than 0.02%.

The reason that this error in the Answer is important is that it creates the implication that there is an overlap in the claimed range versus that disclosed by Maid. There is, in fact, no overlap.

Multiple locations in the Answer also refer to the requirement for "factual evidence" to be presented. This is at least partially supported by the statement that there is "no evidence" under the heading "Evidence Appendix." Irrespective of whether the Appellants are actually required to submit factual evidence, the Appellants' Brief is replete with such factual evidence by reference to the Appellants' original application and the examples or comparative examples contained therein. In that regard, the Appellants note that all of the examples and comparative examples in the Appellants' original specification were actually conducted and submitted under oath. Therefore, the Appellants' Brief contains substantial references to "evidence." Moreover, the Appellants' Brief contained

several figures that provide additional factual evidence. In the event that the figures are not present in the official file, the Appellants' resubmit those figures under the heading of Evidence Appendix for the Board's convenience. Therefore, the Appellants respectfully submit that the positions taken in the Answer with respect to "no evidence" are in error.

In any event, the Appellants respectfully submit that one skilled in the art would not make the hypothetical combination of Tosaka with Maid and the resulting combination would still not result in the Appellants' claimed subject matter. The Appellants sought to improve the property of strength in a large strain range for automotive parts concerning the strain aging hardenability and, there are precisely defined, not only an increased value (conventionally evaluated BH value) of yield strength, which is the strength in a small strain range, but also an increase in value of tensile strength (ΔTS) which is the strength in a large strain range. To put it concretely, the Appellants specify a BH of 80MPa or more and a ΔTS of 40 MPa or more. To clarify the industrial effectiveness of the ΔTS , fatigue resistance and impact resistance are evaluated in the Appellants' inventive examples.

The Examiner admits that the Al/N ratio, solid solution N and grain size are not disclosed in Maid. As set forth in the Appellants' specification, to stably secure solid solution N without the influence of manufacturing conditions, Al is restricted to 0.02 or less and N/Al to 0.3 or more. Also, the cooling condition after finish rolling and conditions concerning coiling temperature are controlled. According to Maid, although the time from completion of rolling to the initiation of cooling is not clear, rapid cooling immediately after completing finish rolling and coiling after cooling to 190-330°C is necessary. It is considered from the foregoing that cooling to an extremely low temperature is necessary. Hence, the influence exerted by manufacturing conditions (coiling temperature) is substantial. It therefore follows that the prescribed strength and bake hardening cannot be achieved when operating within a range of coiling temperature disclosed in the Appellants' examples. Moreover, in Maid, even if cooling to such an extremely low temperature mentioned

above is performed, the value of BH does not reach the claimed value of 80 MPa or more specified by the Appellants in Claim 10, for example. Thus, one skilled in the art can see from the above-mentioned points, when the difference from the Appellants' claims is considered, the additional amounts of Al and Al/N were not appropriately controlled in Maid. Therefore, solid solution N was unable to be secured in Maid and this factually supports the Appellants' position of non-obviousness.

In addition, ΔTS , which is an extremely important specific characteristic of Appellants' claims, is not taken into account at all in Maid and, when considered by referring to the BH and ΔTS results in the Appellants' inventive examples, with values of BH, as small as those of Maid, the Appellants' ΔTS cannot be achieved. This also factually supports the Appellants' position of non-obviousness.

Although Tosaka refers to fining crystal grains, a maximum of the limited range is 20 μm . This is twice as much as the Appellants' claimed 10 μm . This is largely because the object of Tosaka is to improve the stretch flanging property and is different in this regard from the Appellants' goals. In fact, in the Appellants' specification, some examples having a grain size of even 11 μm or less do not satisfy the characteristics, while the minimum grain size of Tosaka is 11 μm or less. In consideration of this, it can be seen that the limitation in grain size of Tosaka is ineffective in deriving the advantages obtained by the Appellants.

The Appellants respectfully request that the rejection of Claims 1-5, 10, 12, and 14-19 accordingly be reversed.

Respectfully submitted,



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